

WHAT IS CLAIMED IS:

1. A centrifugal pump, particularly for electrical household appliances and the like, comprising

a support casing including a body and a volute which are coupled to one another to define a working chamber,

a synchronous electrical motor driven by alternating current, having a stator which is stationary relative to the body, and having a permanent magnet rotor which is rotatable in the body, and

a bladed impeller mounted rotatably in the working chamber and provided with a hub which has a cavity; the impeller being coupled to an end of the rotor which extends into the cavity of the hub of the impeller;

said end of the rotor and the hub of the impeller being provided with a first and a second transverse coupling formation, respectively, which have respective angular extensions which are predetermined in such a manner that there is angular play, suitable for promoting the starting of the motor, between the rotor and the impeller; the coupling formations being capable of interfering with one another, after the motor has started, in order to bring about the drive of the impeller by the rotor;

the portions of the coupling formation of the rotor that are to cooperate with the coupling formation of the impeller being produced from a resilient material;

the coupling formation of the rotor comprising

a substantially radial transverse appendage which extends from and is integral with a drive body of substantially rigid material which is secured to the rotor, and

a damping formation which is moulded in a single piece of resilient material onto the drive body and has two end portions which are moulded onto the opposite surfaces or faces of the appendage and which are to engage the coupling formation of the impeller, and an intermediate connecting and retaining portion which interconnects the end portions

and extends at least partially through the drive body in such a manner that the damping formation as a whole is constrained in a stable manner, axially and angularly, on the drive body.

2. A centrifugal pump according to claim 1, wherein the drive body comprises a substantially tubular portion suitable for being forced with interference onto an end of the rotor.

3. A centrifugal pump according to claim 1, wherein the drive body has a circumferential annular projection to which the appendage is connected.

4. A centrifugal pump according to claim 3, wherein the appendage has a notch which is adjacent to the tubular portion and to the annular projection of the drive body, with which members it defines a passage in which the intermediate portion of the damping formation extends.

5. A centrifugal pump according to claim 4, wherein the appendage is substantially in the form of an L, with a first and a second limb which are connected to the tubular portion and to the annular projection, respectively, of the drive body.

6. A centrifugal pump according to claim 3, wherein there is formed adjacent to the above-mentioned appendage in the annular projection of the drive body a slot which extends angularly beyond the opposite surfaces or faces of the appendage and in which the intermediate portion of the above-mentioned damping formation extends at least partially.

7. A centrifugal pump according to claim 1, wherein the appendage of the drive body has an angular extension of from 25° to 55° and preferably of approximately 40°.

8. A centrifugal pump according to claim 7, wherein the above-mentioned end portions of the damping formation each have an angular extension of from 25° to 55° and preferably of approximately 40° .

9. A centrifugal pump according to claim 3, wherein the appendage of the drive body and the end portions of the damping formation on the side remote from the annular projection have respective terminal surfaces which are inclined relative to the axis of the drive body and which, as a whole, form a surface portion which is substantially conical and convex.

10. A centrifugal pump according to claim 9, wherein the inclination of the terminal surfaces relative to the axis of the drive body is from 30° to 60° , and is preferably approximately 45° .

11. A centrifugal pump according to claim 1, wherein the drive body is produced from a synthetic resin, preferably polypropylene, charged with glass fibres to an extent of from 20% to 40%, and preferably of 30%.

12. A centrifugal pump according to claim 1, wherein the damping formation is produced from a thermoplastic rubber.